

# ERYTHRONEURA OF THE OBLIQUA GROUP FROM OHIO AND TENNESSEE

(HOMOPTERA: CICADELLIDAE)

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An attempt is made to bring the work<sup>1</sup> on the obliqua group of *Erythroneura* up-to-date. Descriptions of five new species, new records for Ohio, corrections and synonymy are included.

Early in April, 1945, large numbers of *Erythroneura* were observed congregating on stones in swift-running streams, where they could be collected in numbers with an aspirator. Those taken in Delaware County, upon closer examination, proved to be almost exclusively members of the obliqua group, and males. Further collecting in this manner in Delaware and Hocking Counties showed that members of other *Erythroneura* groups had the same habit, but it seemed to be a characteristic of males only. A great variety of species occurred.

Unless other collectors are mentioned all specimens were taken by D. J. and J. N. Knull and are in collection of The Ohio State University or of author.

## *Erythroneura alata* n. sp.

Figure 5

Ground color white, vittae bright red. Vertex with even-sided inverted U, rounded at apex, dusky area fills center; continued across pronotum as broad diverging vittae, space between them entirely dusky; scutellum dark, basal angles lighter in some specimens; elytra with broad claval vittae almost filling clavi, but for smoky area adjacent to scutellum, corial vitta broad, upper half appears to be joined to middle third of claval vitta by dark band of dorsum which shows through elytra; costal margin pellucid orange on basal part becoming broadly reddened toward crossveins; crossveins and adjacent part of longitudinal veins red, spots before crossveins and apical cells dusky, inner two cells translucent; small circular area around apices of clavi paler than rest of dorsum. Below a projection of vertexal U over apex of head, face dark, especially toward edges, legs pale, spines of hind femora dark, venter and dorsum chiefly dark.

Genitalia: Female, last ventral segment produced on middle third, pale. Male: Style with large foot, heel not projecting, base curved forming arc with inner margin of posterior point; anterior point narrow, projecting laterally, curved up; posterior point broad, three times as long and broad as anterior point and sharp-pointed. Aedeagus in lateral view short and heavy, ventral surface straight, dorsal sharply cut in before middle, and broadly swollen toward flattened tip, a pair of processes arises at ventral base of shaft, broadens into wing-like structures serrate on outer margins on apical half, narrowing to sharp, straight, spine-like apices.

Length: 3 mm.

Male holotype, Columbus, May 11, 1938; allotype, May 19, 1938; and paratypes, June 9, 1938; Delaware Co., April 2, 1945; April 26, 1944; April 30, 1944; August 27, 1942; Sept. 19, 1943; Oct. 3 and 10, 1943.

Near *E. funesta* Beamer in genital characters, but with a quite distinct color pattern. It bears somewhat the same relationship to *E. funesta* Beamer that *E. plena* Beamer does to *E. repleta* Johnson. In coloring it resembles *E. rufostigmata* Beamer, but is darker.

<sup>1</sup>D. M. Johnson, The Ohio Biological Survey Bulletin 31, issued July 8, 1935.

***Erythroneura anomala* n. sp.**

## Figure 9

Small, ground color creamy white with rather broad orange markings as follows: Vertex with inverted V broadly touching eyes, continuing across pronotum as two slightly diverging vittae; scutellum with tip orange, basal angles pellucid yellow; venter and dorsum yellow, abdominal segments and face more or less orange-tinged; a few black spines on hind femora. Elytra with orange oblique vittae, one on clavus, one on lower middle of corium, and one along costal margin; spots before crossveins and apices faintly dusky.

Inner male genitalia: Style with small rather square foot, heel very prominent, projecting down, its outer edge parallel with outer edge of toe, base curved, anterior point short, sharp, evenly joined to posterior point which is merely a small sharp projection. Aedeagus in lateral view broad, short and straight, with flattened dorsally projecting apex, and sides with pair of lateral broad projections straight out from middle, about as broad as shaft, bent down and narrowed toward apices.

Length: 2.5 mm.

Described from three males, holotype and paratype, Hocking Co., April 26, 1938; and Knox Co., May 8, 1933, D. M. Johnson, *Carpinus*.

A small member of the group, resembling *E. mansueta* Beamer somewhat in character of inner male genitalia.

*E. autenae* Johnson instead of *auteni*, as in original description. Additional specimens have been taken from Delaware Co.

*E. caerulea* Beamer, from *Hypericum* sp., Scioto Co., June 10 and 17, 1944.

*E. cauta* Beamer, Delaware Co.

*E. coarctata* Beamer, Fig. 2, Hocking Co., April 17, 1938, and May 5.

*E. cotidiana* Beamer, Fig. 4, Hocking Co., April 12, 1945; Scioto Co., June 9, 1943, and June 17, 1944.

*E. divisa* McA. was reported for Ohio incorrectly as *E. atrimucronata* Beamer.

*E. iconica* McA., Fig. 7, Hocking Co., April 11, 1945.

*E. idonea* Beamer (Jour. Kans. Ent. Soc. 8: 100, 1935) has precedence over *E. gargantua* Johnson (Ohio Biol. Surv. Bull. 31: 81, 1935) by eight days since the date of issue of the Journal was July 1, and of the Bulletin July 8. This is a common species on buckeye in Delaware Co., and occurs in Adams and Scioto Cos.

*E. infinita* Beamer, Fig. 11, Pickaway Co., Feb. 20, 1935, J. S. Caldwell; Knox Co., Sept. 17, Mary Auten; Ashland Co., Mary Auten; Hocking Co., April 11, 1945.

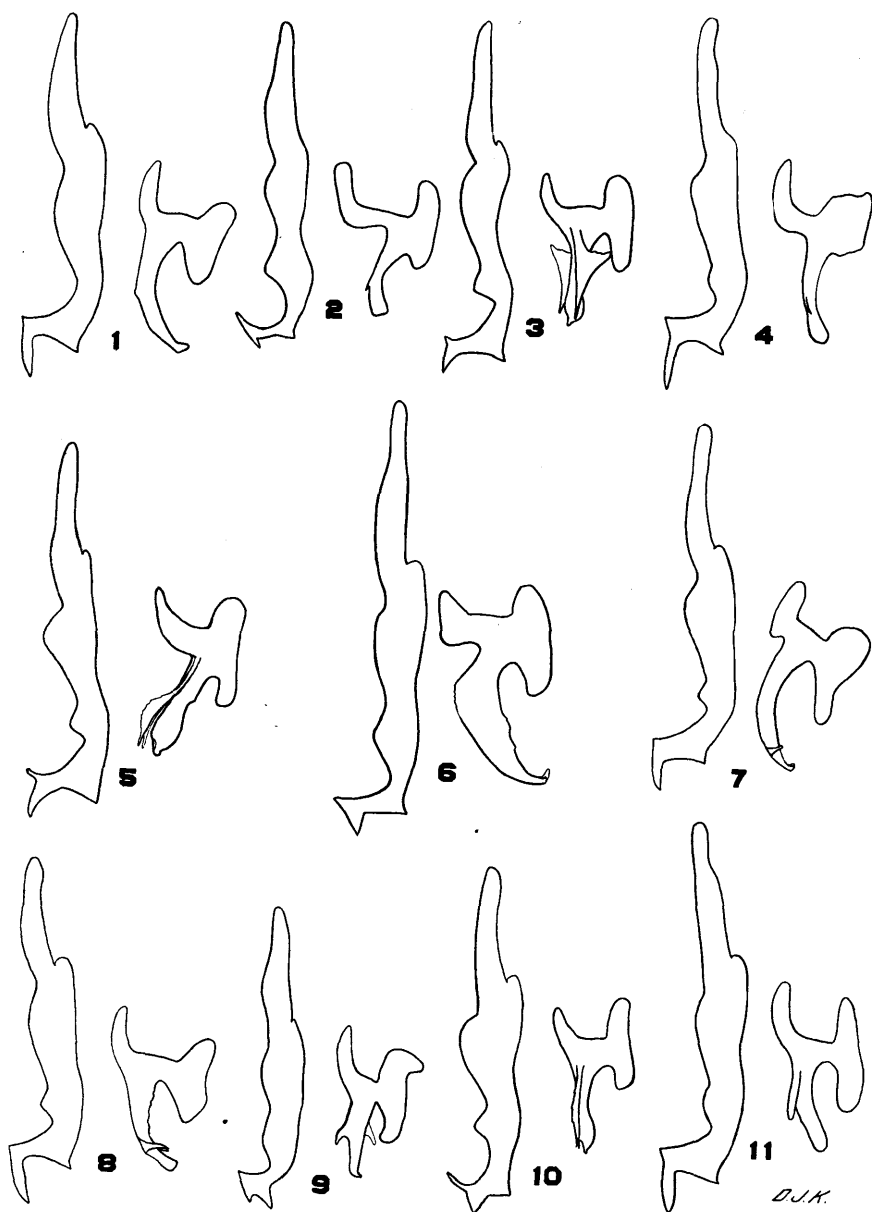
*E. penelutea* Beamer, Fig. 1, was reported from Ohio on the basis of one female specimen. A series has been taken throughout the season in Delaware and Hocking Cos.

*E. perita* Beamer, (Jour. Kans. Ent. Soc. 8: 100, 1935), Pickaway Co., April 5, 1934, J. S. Caldwell; Delaware Co., Aug. 27, 1942, Oct. 9, 1942, May 6, 1943, and Sept. 30, 1943. *E. extrema* Auten & Johnson (Ann. Ent. Soc. Am. 29: 64, 1936) is a synonym of this species.

***Erythroneura praecisa* n. sp.**

## Figure 10

General ground color white to semihyaline on elytra, where very little appears. Vertex with orange inverted V narrow at apex, and not touching eyes, even-sided, continued across pronotum as two slightly diverging orange vittae indented on outer margins at middle, and not touching anterior margin of pronotum; area between vittae darkened subcutaneously, basal angles of scutellum black, remainder yellow. Elytra extensively marked; clavus with broad vitta on basal two-thirds, dusky abdomen showing through gives outer third a dark cast, a narrow line along margin toward apex, usually lighter, a broad vitta on corium reaching crossveins, and a broad costal stripe, yellow translucent on plaque, crossveins partly red, dark spots above and below, except at base of  $M_2$ ;  $R_1$  and  $R_3$  clouded, also base of  $M_2$ ; lower part of  $M_1$



FIGS. 1-11. Lateral view of style and aedeagus of *Erythroneura*. 1. *penelutea* Beamer. 2. *coarctata* Beamer. 3. *sagittata* Beamer. 4. *cotidiana* Beamer. 5. *alata* n. sp. 6. *victorialis* n. sp. 7. *iconica* McAtee. 8. *tenebrosa* n. sp. 9. *anomala* n. sp. 10. *praecisa* n. sp. 11. *infinita* Beamer.

and all of  $M_2$  quite clear; below, head and legs sordid yellow, abdomen and mesonotum dark, dorsum dark.

**Genitalia:** Female, last ventral segment produced into truncate lobe on median third, pale, a few pale hairs on pygofer. Male: Style with small foot; heel a right angle, base short, straight, anterior point longer than posterior point and narrow, turned up, posterior point heavy, edges rough, as broad as base of foot, sides sharply converging, forming a little less than a right angle. Aedeagus almost straight in lateral view with rounded dorsal bulge toward flattened apex, a pair of narrow processes arises at anterior base and extends almost to tip, slightly serrate on ventral margin.

Length: 3 mm.

Holotype female, Hocking Co., June 1, 1938; allotype, April 28, 1934, J. S. Caldwell; paratypes August 31, 1944, and Sept. 16, 1943; paratypes, Great Smoky Mt. National Park, Tenn., June 14 and 21, 1942; and Indian Gap, Smoky Mts., Tenn., Sept. 8, 1939, Mary Auten.

In characters of genitalia close to *E. aspera* Beamer, but the foot of style is straight and aedeagus is narrower in lateral view.

*E. sagittata* Beamer, Fig. 3, Ashland Co., Sept. 23, Mary Auten; Delaware Co., Aug. 12, 1942, Sept. 9, 1943, Sept. 16, 1943, Oct. 3, 1943, and Oct. 9, 1942.

*E. sincera* Johnson has a pair of delicate processes just ventrad to base of shaft of aedeagus, sinuate, swollen slightly in middle, and extending to opening of duct. In this species as well as in *E. rubrotincta* Johnson, processes of aedeagus are often broken. Both species have been taken in Delaware Co., and *rubrotincta* has been taken also in Hocking, Monroe and Scioto Counties.

*E. spearca* Auten & Johnson, Hocking Co., April 17, 1938, and Oct. 17, 1941; Shawnee Forest, Scioto Co., June 9, 1943.

*E. stolata* McAtee, common in beech woods near Columbus. In some specimens a pair of fine lateral processes arises at base of aedeagus, separated from it, and extends almost parallel to shaft about one-third its length.

#### ***Erythroneura tenebrosa* n. sp.**

##### **Figure 8**

Ground color yellowish with narrow orange markings. Inverted V of vertex with a tendency toward clover-shape, two lateral prongs extend toward upper inner corner of eyes; vittae of pronotum, two dashes remote from margins; basal angles of scutellum yellow, narrowly outlined on inner margins with orange, apex orange, narrow oblique vitta on clavus, one on middle of corium and faint streak along costal margin, three dark rounded spots before crossveins and apical cells clouded, inner two clearer. The dark dorsum showing through elytra in region of middle of clavus gives a characteristic banded appearance. Below, face sordid yellow, legs pale, area below beak dark, segments of venter of abdomen sordid yellow, genital segments pale, a dark stripe at base of dorsum of abdomen and some darkening below surface of scutellum and middle of pronotum.

Inner male genitalia: Style with medium stout foot, heel moderately projecting, base slightly curved, posterior point as long as base of foot, heavy, sometimes very broad, slightly curved in, blunt; anterior point about a right angle. Aedeagus in lateral view, curved dorsad at tip, apex laterally broadened and blunt, dorsal surface roughened, a pair of spines arises on ventral surface just before shaft opening and extends laterad, these spines taper evenly to apices and in lateral view extend about one-third their length beyond shaft.

Length: 3 mm.

A common species. Male holotype, Delaware Co., April 30, 1944, and paratypes, allotype Sept. 19, 1943, and paratypes, March 18, 1945, Sept. 9, 1943, April 26, 1944, March 25, 1945, and April 2, 1945; Hocking Co., June 28, May 1, 1938, April 11, 1945; Columbus, May 16, 1937, Mary Auten; and specimens previously placed with *E. autenae* Johnson: Knox Co., May 8, 1933, M. Auten & D. M. Johnson; Richland Co., Oct. 16, 1934, M. Auten; Allen Co., Aug. 19, 1934, D. M. Johnson.

Very similar in characters of inner male genitalia to *E. tenuispica* Beamer from which it is readily separated by its dark dorsum.

*E. torva* Beamer, Mohican St. Park, July 31, 1935, D. M. Johnson; and Delaware Co., April 2, 1945.

***Erythroneura victoralis* n. sp.**

Figure 6

Large, white with yellow markings except for those on clavus which are usually bright red. Head with broad indistinct inverted V not touching eyes, continued across pronotum as broad, faint, slightly diverging vittae; scutellum, basal angles and tip yellow; elytra, clavi with broad red vittae based on claval vein and filling a little more than apical third; outwardly and apically more translucent, shining, indistinct yellow with vittae on coria along vein and on costal margins, crossveins yellow, a few faint dusky spots before crossveins and apices hyaline. Below pale.

Genitalia: Female, last ventral segment produced sharply on median third, in lobe slightly indented over ovipositor, median lobe equal in length to sides, ovipositor entirely pale, a row of white spines either side on pygofer. Male: Style with large, long foot, heel sharp, projecting, base straight, anterior projecting laterad, slightly smaller than heavy posterior point with which it joins in even line on outer edge. Posterior point meets base at more than right angle and is sharp-pointed. Aedeagus large, in lateral view swollen just below base, curves caudad, narrowed on outer half, toothed on ventral surface on widest basal portion, and dorsally below middle; apex bifid.

Length: 3.5 mm.

Taken from blueberry at 5,000 to 6,000 ft. in Great Smoky Mt. National Park, Tenn., holotype male, allotype and paratypes June 14, 1942, and paratypes June 21, 1942.

A bright red V on the clavi when elytra are closed, noticeable with unaided eye, caused the preparator to call this the "victory leafhopper." It is near in genital characters to *E. nava* Beamer.